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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,198	12/15/2003	Xintian E. Lin	42339-198341	4797
26694	7590	08/09/2006	EXAMINER	
VENABLE LLP			HAROON, ADEEL	
P.O. BOX 34385			ART UNIT	
WASHINGTON, DC 20045-9998			PAPER NUMBER	
			2618	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/734,198	Applicant(s) LIN ET AL.	
	Examiner Adeel Haroon	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 31-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 7/13/06, with respect to the rejection of claims 1-30 have been fully considered and are persuasive. Therefore, the finality of the previous action mailed on 7/3/06 is vacated and the rejection has been withdrawn. A new Office Action is attached below.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-30, drawn to an apparatus with switch used to connect a plurality of receivers, classified in class 455, subclass 132.
 - II. Claims 31-34, drawn to transmitting diversity control, classified in class 455, subclass 101.

Because these inventions are distinct and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jeffrey Gluck on 8/2/06 a provisional election was made without traverse to prosecute the invention of I, claims 1-30.

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Affirmation of this election must be made by applicant in replying to this Office action.

Claims 31-34 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 11, 12, 14, 15, 19-22, and 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Evans et al. (U.S. 2003/0083016 as provided by applicant).

With respect to claim 1, Evans et al. disclose an apparatus, element number 12, in figure 1 with a switch, element number SW2, adapted to couple each of at least two receiver chains, element numbers RX1 and RX2, to one of at least two of a plurality of antennas, element numbers RA1-RA4 (Paragraph 16). Evans et al. teach that the switch is further adapted to couple said receiver chains to said plurality of antennas such that each receiver chain is coupled to a different one of said plurality of antennas,

with the switch comprising at least two sub-switches, element numbers 42 and 44, each sub-switch adapted to be coupled to a different one of said at least two receiver chains (Paragraph 16).

With respect to claim 2, Evans et al. disclose the switch works according to a predetermined criterion (Paragraph 17 and 18).

With respect to claim 3, Evans et al. disclose combining the outputs of the receiver chains to form a combined output, 56 (Paragraph 17).

With respect to claim 4, Evans et al. disclose that each sub-switch is coupled to at least two antennas (Paragraph 16).

With respect to claim 5, Evans et al. disclose that a sub-switch is coupled to all of the plurality of antennas, when only RA2 and RA3 are interpreted as the plurality of antennas.

With respect to claim 6, Evans et al. disclose that one sub-switch is coupled to all except one of the plurality of antennas in figure 1.

With respect to claim 7, Evans et al. disclose that each sub-switch is coupled to two antennas in figure 1.

With respect to claim 11, Evans et al. disclose a system, element number 12, in figure 1 with a switch, element number SW2, adapted to couple each of at least two receiver chains, element numbers RX1 and RX2, to one of at least two of a plurality of antennas, element numbers RA1-RA4 (Paragraph 16). Evans et al. teach that the switch is further adapted to couple said receiver chains to said plurality of antennas such that each receiver chain is coupled to a different one of said plurality of antennas,

with the switch comprising at least two sub-switches, element numbers 42 and 44, each sub-switch adapted to be coupled to a different one of said at least two receiver chains (Paragraph 16).

With respect to claim 12, Evans et al. disclose combining the outputs of the receiver chains to form a combined output, 56 (Paragraph 17).

With respect to claim 14, Evans et al. disclose the switch works according to a predetermined criterion (Paragraph 17 and 18).

With respect to claim 15, Evans et al. disclose that each sub-switch is coupled to at least two antennas (Paragraph 16).

With respect to claims 19 and 25, Evans et al. disclose a method that can be executed by a machine readable medium that determines a subset of antennas out of a plurality of antennas, using a predetermined criterion and switching signals from said subset of antennas to a corresponding number of receiver chains, each receiver chain receiving a different one of said signals from said subset of best antennas, wherein each receiver chain may only receive signals from a predetermined subset of said plurality of antennas (Paragraphs 16 and 17).

With respect to claims 20 and 26, Evans et al. disclose combining the outputs of the receiver chains (Paragraph 17).

With respect to claims 21 and 27, Evans et al. teach that each receiver chain may receive signals from any of the plurality of antennas, when only RA2 and RA3 are interpreted as the plurality of antennas.

With respect to claims 22 and 28, Evans et al. disclose that one sub-switch is coupled to all except one of the plurality of antennas in figure 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8-10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. in view of Nakamura (U.S. 6,243,563).

With respect to claims 8 and 10, the apparatus of Evans et al. is described above in the discussion of claim 1. Evans et al. do not disclose a second switch that can be coupled to a power amplifier/transmitter and receiver chain. However, Nakamura disclose an apparatus with a plurality of antennas and a switch, element number 4, to separate the transmitter and receiver chain (Column 4, lines 17-35). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use Evans et al.'s antenna selection technique in junction with Nakamura's transceiver in order "to operate a wireless communication system more effectively" (Evans, Paragraph 4)

With respect to claim 9, Evans et al. disclose that a sub-switch is coupled to all of the plurality of antennas, when only RA2 and RA3 are interpreted as the plurality of antennas.

With respect to claims 16 and 17, the system of Evans et al. is described above in the discussion of claim 11. Evans et al. do not disclose a second switch that can be coupled to a power amplifier/transmitter and receiver chain. However, Nakamura disclose an apparatus with a plurality of antennas and a switch, element number 4, to separate the transmitter and receiver chain (Column 4, lines 17-35). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use Evans et al.'s antenna selection technique in junction with Nakamura's transceiver in order "to operate a wireless communication system more effectively" (Evans, Paragraph 4)

7. Claims 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. in view of Lo et al. (U.S. 6,987,958).

With respect to claim 13, the system of Evans et al. is described above in the discussion of claims 11 and 12. Evans et al. is silent on what happens to the combined signal. However, Lo et al. disclose a system that has a plurality of antennas and plurality of receivers with a combiner to combine the received signals in figure 2 (Column 3, lines 7-17). Lo et al. teach a demodulator, element number 240, to receive

the combined signal and demodulate the combined signal (Column 3, lines 31-34).

Therefore, it would be obvious to one of ordinary skill in the art to apply Lo et al.'s demodulation technique to the system of Evans et al. in order to extract the information from the received signal.

8. Claims 18, 23, 24, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. in view of Ohkuba et al. (U.S. 2003/0003937).

With respect to claim 18, Ohkuba et al. disclose a second transceiver, element number 11, which lacks diversity since it has only one antenna, element number 17, adapted to communicate with a first transceiver, element number 1, which employs antenna diversity in figure 1 (Paragraph 7 and 8). Since the first transceiver communicates with the second transceiver knowing that the first transceiver lacks antenna diversity, the first transceiver must communicate at a data rate accordingly. Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use Evans et al.'s antenna selection technique in junction with Nakamura's transceiver in order "to operate a wireless communication system more effectively" (Evans, Paragraph 4)

With respect to claim 23, 24, 29, and 30, the method of Evans et al. is described above in the discussion of claim 19. Evans et al. do not disclose a power amplifier/transmitter and receiver chain. However, Ohkuba et al. disclose a system having diversity for reception and transmission in figure 1 and 5 (Paragraph 7 and 8).

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Also, since the base station communicates with the mobile station knowing that the mobile station lacks antenna diversity, the base station must communicate at a data rate accordingly. Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to use Evans et al.'s antenna selection technique in junction with Nakamura's base station in order "to operate a wireless communication system more effectively" (Evans, Paragraph 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH
8/3/06


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